

REMARKS

Reconsideration and allowance of the present application in view of the following remarks are respectfully requested.

Currently, claims 1-28 are pending in the present application including independent claims 1, 13 and 24. The pending claims are generally directed to a filtration device.

In the Office Action, independent claims 1, 13 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,209,916 to May, et al. in view of U.S. Patent No. 5,762,797 to Patrick, et al. It was stated that “[May, et al.] discloses the claimed invention with the exception of the recited perforated core.” It was also stated that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the filtration device of May et al. with a perforated core of the type disclosed by Patrick et al.” However, Applicants respectfully submit that one of ordinary skill in the art would not have found it obvious to combine May, et al. and Patrick, et al. in the manner suggested in the Office Action.

Specifically, May, et al. teaches away from the claimed combination. In operation, the fluid filtered in May, et al. proceeds “outwardly from the interior of the filter.” (Col. 3, lines 38-39). Larger sized contaminants are trapped in the inner layers while smaller particles are entrapped in the outer layers. (Col. 3, lines 40-42). The innermost layer is designed to obstruct larger sized particles of approximately 60 microns and greater with some of the particles being allowed to penetrate a limited distance. (Col. 2, lines 8-11). The filtering action of May, et

al. is “distinguished from the normal convolute type filter in which the solid contaminants are collected at the surface of the filter layer.” (Col. 2, lines 15-18).

By contrast, Patrick, et al. describes a filter in which the preferred flow is inwardly from the outer surface of the filter to the inner perforated core. (Col. 3, Col. 4). A microporous membrane is “wrapped tightly around the core so as to cover it completely.” (Col. 3, lines 62-63). The membrane has pores “of a nominal size of about between approximately 5.0 μ to 0.10 μ , preferably 0.45 μ to 0.10 μ or less, so that it will effectively keep most gram positive and gram negative bacteria and containment particles larger than 0.45 μ to 0.10 μ from flowing through the membrane into the interior of the perforated core.” (Col. 4, lines 2-6).

It would be improper hindsight analysis to consider the perforated core component of Patrick, et al. without its tightly wrapped membrane. It is improper to simply pick and choose (or dismantle) just those components needed from a prior art reference to combine in a Section 103 combination.

As described above, the innermost layer of May, et al. is designed to obstruct larger sized particles of approximately 60 microns and greater with some of the particles being allowed to penetrate a limited distance. If May, et al. was to be combined with the perforated core of Patrick, et al., it would no longer be distinguishable from the normal type of filter in which contaminants are collected at the surface of the filter layer. The smaller sized membrane pores of the perforated core would block all particles, both large and small, in the hollow interior described in May, et al. This would defeat the specific purpose of May, et

al. of having no “obstructing effect on the passage of fluid through the filter, [but] merely stopping the solid contaminants progressively as they penetrate the media.” (Col. 2, lines 27-30). Thus, there would be no motivation to combine the references in the manner suggested in the Office Action.

Additionally, one skilled in the art would not be motivated to use a perforated core of any type with the structure in May, et al. The “depth filtration” filtering principle used in the May, et al. structure relies on carefully selected thicknesses and densities of the different filtration layers to achieve the desired filtration profile without a reduction in rate of fuel passage through the filter. (Col. 3, line 73 through Col. 4, line 11). A perforated core will significantly reduce the filtration surface area of the innermost filtering layer and obviously disrupt the radial flow rate and distribution pattern of fluid through the outer layers of the device.

In addition, the filter of May, et al. is designed for an entirely different purpose than the filter of Patrick, et al. May, et al. relates to a filter construction for removing contaminants from liquids “such as fuels.” (Col. 1, line 12). The removal of such contaminants is “essential to the proper performance of combustion engines of either piston, turbine or jet propulsion type.” (Col. 1, lines 18-20). In fact, an object of May, et al. is efficient removal of contaminants “from the liquid fuel.” (Col. 1, line 29).

On the other hand, Patrick, et al. relates to an “antimicrobial filter cartridge for a filtration system for removing microorganisms from water.” (Col. 1, lines 5-6). Thus, even if the water flow through the filter of Patrick, et al. was to be

reversed, the core would still first be wrapped with an “antimicrobial yarn/nonwoven mat, then overlaid with the microporous membrane.” (Col. 6, lines 26-28). The purpose of such an antimicrobial yarn is to “kill bacteria therein.” (Col. 6, line 29). Thus, there would be no motivation to combine the antimicrobial core of Patrick, et al. with the liquid fuel filter of May, et al. Therefore, for at least these reasons, Applicants respectfully submit that the present claims patentably define over all of the prior art of record.

In addition, the above-cited references were also cited in various combinations, and in conjunction with U.S. Patent Nos. 5,607,595 to Hiasa, et al. and 4,523,995 to Pall, et al., to reject dependent claims 2, 5-8, 11, 14, 17-20, 22 and 27-28. Applicants respectfully submit, however, that at least for the reasons indicated above relating to corresponding independent claims 1, 13 and 24, claims 2, 5-8, 11, 14, 17-20, 22 and 27-28 patentably define over the references cited. However, Applicants also note that the patentability of dependent claims 2, 5-8, 11, 14, 17-20, 22 and 27-28 does not necessarily hinge on the patentability of independent claims 1, 13 and 24. In particular, some or all of these claims may possess features that are independently patentable, regardless of the patentability of claims 1, 13 and 24.

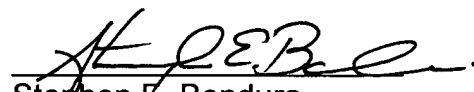
In summary, Applicants respectfully submit that the present claims patentably define over all of the prior art of record for at least the reasons set forth above. As such, it is believed that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested.

Examiner Cintins is invited and encouraged to telephone the undersigned, however, should any issues remain after consideration of this response.

Please charge any additional fees required by this Amendment to Deposit Account No. 04-1403.

Respectfully requested,

DORITY & MANNING, P.A.


Stephen E. Bondura
Registration No. 35,070

DORITY & MANNING, P.A.
P. O. Box 1449
Greenville, SC 29602-1449
Phone: (864) 271-1592
Facsimile: (864) 233-7342

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